Complete Summary

GUIDELINE TITLE

Diabetes care in the school and day care setting.

BIBLIOGRAPHIC SOURCE(S)

Klingensmith G, Kaufman F, Schatz D, Clarke W. Diabetes care in the school and day care setting. Diabetes Care 2004 Jan;27(Suppl 1):S122-8. [22 references] PubMed

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Type l diabetes mellitus
- Type 2 diabetes mellitus

GUIDELINE CATEGORY

Management

CLINICAL SPECIALTY

Endocrinology
Family Practice
Internal Medicine
Pediatrics
Preventive Medicine

INTENDED USERS

Health Care Providers
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for the management of children with diabetes in the school and day care setting

TARGET POPULATION

Children with diabetes who are in school and day care settings

INTERVENTIONS AND PRACTICES CONSIDERED

Management

1. Individualized diabetes medical management plan, addressing:
    - Blood glucose monitoring
    - Insulin administration
    - Meals and snacks
    - Symptoms and treatment of hypoglycemia and hyperglycemia
2. Provision by the parent/guardian to the school or day care provider with the following:
    - All diabetes supplies and equipment (blood glucose testing, insulin administration, urine ketone testing, logbook, source of glucose, glucagon emergency kit)
    - Information regarding diabetes and required tasks
    - Emergency phone numbers
    - Student's meal/snack schedule
3. Provision by the school or day care provider
    - Staff training and education regarding diabetes care, tasks, equipment usage, emergency management
    - Permissions and provisions to the student (privacy, access to help and supplies, food as needed, excused absences, storage of supplies, restroom privileges, etc.)
4. Student diabetic self-care as appropriate to age, experience, and developmental status and abilities
    - Self-monitoring of blood glucose in the classroom
    - Administration of insulin

MAJOR OUTCOMES CONSIDERED

- Child's safety and well being
- Child's ability to participate fully in the school or day care experience
- Glycemic levels
- Risk and rate of diabetes-related complications

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The paper was peer-reviewed, modified, and approved by the Professional Practice Committee and the Executive Committee.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

General Guidelines for the Care of the Child in the School and Day Care Setting

I. Diabetes Medical Management Plan

An individualized Diabetes Medical Management Plan should be developed by the parent/guardian, the student's diabetes care team, and the school or day care provider. Inherent in this process are delineated responsibilities assumed by all parties, including the parent/guardian, the school personnel, and the student. The Diabetes Medical Management Plan should address the specific needs of the child and provide specific instructions for each of the following:

1. Blood glucose monitoring, including the frequency and circumstances requiring testing
2. Insulin administration (if necessary), including doses/injection times prescribed for specific blood glucose values and the storage of insulin
3. Meals and snacks, including food content, amounts, and timing
4. Symptoms and treatment of hypoglycemia (low blood glucose), including the administration of glucagon if recommended by the student's treating physician
5. Symptoms and treatment of hyperglycemia (high blood glucose)
6. Testing for ketones and appropriate actions to take for abnormal ketone levels, if requested by the student's health care provider

Refer to the original guideline document for Figure 1: Diabetes Management Plan.

II. Responsibilities of the various care providers

A. The parent/guardian should provide the school or day care provider with the following:

1. All materials and equipment necessary for diabetes care tasks, including blood glucose testing, insulin administration (if needed), and urine ketone testing. The parent/guardian is responsible for the maintenance of the blood glucose testing equipment (i.e., cleaning and performing controlled testing per the manufacturer's instructions) and must provide materials necessary to ensure proper disposal of materials. A separate logbook should be kept at school with the diabetes supplies for the staff or student to record test results; blood glucose values should be transmitted to the parent/guardian for review as often as requested.

2. Supplies to treat hypoglycemia, including a source of glucose and a glucagon emergency kit, if indicated in the Diabetes Medical Management Plan
3. Information about diabetes and the performance of diabetes-related tasks
4. Emergency phone numbers for the parent/guardian and the diabetes care team so that the school can contact these individuals with diabetes-related questions and/or during emergencies
5. Information about the student's meal/snack schedule. The parent should work with the school to coordinate this schedule with that of the other students as closely as possible. For young children, instructions should be given for when food is provided during school parties and other activities.
6. In most locations and increasingly, a signed release of confidentiality from the legal guardian will be required so that the health care team can communicate with the school. Copies should be retained both at school and in the diabetes offices.

B. The school or day care provider should provide the following:
1. Training to all adults who provide education/care for the student on the symptoms and treatment of hypoglycemia and hyperglycemia and other emergency procedures. An adult and back-up adult(s) trained to: 1) perform fingerstick blood glucose monitoring and record the results; 2) take appropriate actions for blood glucose levels outside of the target ranges as indicated in the student's Diabetes Medical Management Plan; and 3) test the urine or blood for ketones, when necessary, and respond to the results of this test.
2. Immediate accessibility to the treatment of hypoglycemia by a knowledgeable adult. The student should remain supervised until appropriate treatment has been administered, and the treatment should be available as close to where the student is as possible.
3. If indicated by the child's developmental capabilities and the Diabetes Medical Management Plan, an adult and back-up adult(s) trained in insulin administration
4. An adult and back-up adult(s) trained to administer glucagon, in accordance with the student's Diabetes Medical Management Plan.
5. A location in the school to provide privacy during testing and insulin administration, if desired by the student and family, or permission for the student to check his or her blood glucose level and to take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if indicated in the student's Diabetes Medical Management Plan
6. An adult and back-up adult(s) responsible for the student who will know the schedule of the student's meals and snacks and work with the parent/guardian to coordinate this schedule with that of the other students as closely as possible. This individual also will notify the parent/guardian in advance of any expected changes in the school schedule that affect the student's meal

times or exercise routine. Young children should be reminded of snack times.

7. Permission for the student to see school medical personnel upon request.
8. Permission for the student to eat a snack anywhere, including the classroom or the school bus, if necessary to prevent or treat hypoglycemia
9. Permission to miss school without consequences for required medical appointments to monitor the student's diabetes management. This should be an excused absence with a doctor's note, if required by usual school policy.
10. Permission for the student to use the restroom and have access to fluids (i.e., water) as necessary
11. An appropriate location for insulin and/or glucagon storage, if necessary

An adequate number of school personnel should be trained in the necessary diabetes procedures (e.g., blood glucose monitoring, insulin and glucagon administration) and in the appropriate response to high and low blood glucose levels to ensure that at least one adult is present to perform these procedures in a timely manner while the student is at school, on field trips, and during extracurricular activities or other school-sponsored events. These school personnel need not be health care professionals.

The student with diabetes should have immediate access to diabetes supplies at all times, with supervision as needed. Provisions similar to those described above must be available for field trips, extracurricular activities, other school-sponsored events, and on transportation provided by the school or day care facility to enable full participation in school activities.

It is the school's legal responsibility to provide appropriate training to school staff on diabetes-related tasks and in the treatment of diabetes emergencies. This training should be provided by health care professionals with expertise in diabetes unless the student's health care provider determines that the parent/guardian is able to provide the school personnel with sufficient oral and written information to allow the school to have a safe and appropriate environment for the child. If appropriate, members of the health care team should provide instruction and materials to the parent/guardian to facilitate the education of school staff. Educational materials from the American Diabetes Association and other sources targeted to school personnel and/or parents are available. Table 1 in the original guideline document includes a listing of appropriate resources.

III. Expectations of the student in diabetes care

Children and youths should be able to implement their diabetes care at school with parental consent to the extent that is appropriate for the student's development and his or her experience with diabetes. The extent of the student's ability to participate in diabetes care should be agreed upon by the

school personnel, the parent/guardian, and the health care team, as necessary. The ages at which children are able to perform self-care tasks are very individual and variable, and a child's capabilities and willingness to provide self-care should be respected.

1. Preschool and day care. The preschool child is usually unable to perform diabetes tasks independently. By 4 years of age, children may be expected to generally cooperate in diabetes tasks.
2. Elementary school. The child should be expected to cooperate in all diabetes tasks at school. By age 8 years, most children are able to perform their own fingerstick blood glucose tests with supervision. By age 10, some children can administer insulin with supervision.
3. Middle school or junior high school. The student should be able to administer insulin with supervision and perform self-monitoring of blood glucose under usual circumstances when not experiencing a low blood glucose level.
4. High school. The student should be able to perform self-monitoring of blood glucose under usual circumstances when not experiencing low blood glucose levels. In high school, adolescents should be able to administer insulin without supervision.

At all ages, individuals with diabetes may require help to perform a blood glucose test when the blood glucose is low. In addition, many individuals require a reminder to eat or drink during hypoglycemia and should not be left unsupervised until such treatment has taken place and the blood glucose value has returned to the normal range.

Monitoring Blood Glucose in the Classroom

It is best for a student with diabetes to obtain a blood glucose level and to respond to the results as quickly and conveniently as possible. This is important to avoid medical problems being worsened by a delay in testing/treatment and to minimize educational problems caused by missing instruction in the classroom. Accordingly, as stated earlier, a student should be permitted to monitor his or her blood glucose level and take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if preferred by the student and indicated in the student's Diabetes Medical Management Plan. However, some students desire privacy during testing and this preference should also be accommodated.

In summary, with proper planning and the education and training of school personnel, children and youth with diabetes can fully participate in the school experience. To this end, the family, the health care team, and the school should work together to ensure a safe learning environment.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on the evidence reviewed in the following publications: Diabetes Control and Complications Trial Research Group: The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. N Engl J Med 1993;329:977-986; and Diabetes Control and Complications Trial Research Group: The effect of intensive diabetes treatment on the development and progression of long-term complications in adolescents with insulin-dependent diabetes mellitus. J Pediatr 1994;125:177-188.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate diabetes management in the school and day care setting allowing for the child's immediate safety, long-term well-being, and optimal academic performance.
- Glycemic control and decreased risk of diabetes-related complications. The Diabetes Control and Complications Trial showed a significant link between blood glucose control and the later development of diabetes complications, with improved glycemic control decreasing the risk of these complications.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The original guideline document provides information that can be used in a school or day care setting including: (1) background information on diabetes for school personnel (see Appendix in the original guideline document) and (2) diabetes medical management plan (see Figure 1 in the original guideline document).

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Klingensmith G, Kaufman F, Schatz D, Clarke W. Diabetes care in the school and day care setting. Diabetes Care 2004 Jan;27(Suppl 1):S122-8. [22 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 (revised 2004 Jan)

GUIDELINE DEVELOPER(S)

American Diabetes Association - Professional Association

SOURCE(S) OF FUNDING

The American Diabetes Association received an educational grant from LifeScan, Inc., a Johnson & Johnson Company, to support publication of the 2004 Diabetes Care Supplement.

GUIDELINE COMMITTEE

Professional Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors of Position Statement, Initial Draft: Georgeanna Klingensmith, MD; Francine Kaufman, MD; Desmond Schatz, MD; William Clarke, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This release updates a previously published guideline: Klingensmith G, Kaufman F, Schatz D, Clarke W. Care of children with diabetes in the school and day care setting. Diabetes Care 2003 Jan;26 Suppl 1:S131-5.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Diabetes Association (ADA) Web site.

Print copies: Available from American Diabetes Association, 1701 North Beauregard Street, Alexandria, VA 22311.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on April 2, 2001. The information was verified by the guideline developer on August 24, 2001. This summary was updated by ECRI on April 21, 2003, and May 26, 2004.

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Date Modified: 11/8/2004